# **Complete Summary**

## **GUIDELINE TITLE**

Preventive services for children and adolescents.

# BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Preventive services for children and adolescents. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2006 Oct. 77 p. [153 references]

#### **GUI DELI NE STATUS**

This is the current release of the guideline.

This guideline updates a previous version: Preventive services for children and adolescents. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Oct. 68 p.

## \*\* REGULATORY ALERT \*\*

## FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- June 15, 2007, RotaTeq (Rotavirus, Live, Oral, Pentavalent Vaccine): Changes
  to the ADVERSE REACTIONS and POST-MARKETING sections of the product's
  prescribing information. The ADVERSE REACTIONS section was updated to
  include six cases of Kawasaki disease that were observed during the Phase 3
  clinical trial.
- <u>February 13, 2007, Rotavirus, Live, Oral, Pentavalent Vaccine (RotaTeq)</u>: FDA Public Health Notification regarding 28 post-marketing reports of intussusception following administration of Rotavirus, Live, Oral, Pentavalent vaccine (RotaTeq).

## **COMPLETE SUMMARY CONTENT**

\*\* REGULATORY ALERT \*\*

**SCOPE** 

METHODOLOGY - including Rating Scheme and Cost Analysis RECOMMENDATIONS EVIDENCE SUPPORTING THE RECOMMENDATIONS

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
QUALIFYING STATEMENTS

IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT
CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

## **SCOPE**

## DISEASE/CONDITION(S)

Preventable diseases or conditions such as:

- Infectious diseases such as diphtheria, tetanus, pertussis, poliomyelitis, measles, mumps, rubella, meningitis, hepatitis B, varicella, influenza, pneumococcal pneumonia, hepatitis A, rotavirus infection
- Cervical cancer
- Chlamydia infection
- Injuries due to bicycles and motor vehicles
- Injuries due to burns, choking, falls, firearms, poisoning, and water
- Disorders resulting from inborn errors of metabolism
- Tobacco use
- Vision loss
- Obesity
- Sudden infant death syndrome (SIDS)

The guideline developers also discuss, but make no specific recommendations for, preventive services related to the following conditions:

- Child maltreatment
- Breast cancer
- Dental and periodontal disease
- Developmental and behavioral disorders
- Dyslipidemia
- Hearing loss
- Iron deficiency
- Developmental dysplasia of the hip
- Scoliosis
- Pregnancy
- Sexually transmitted infection (STI) (other than chlamydia)
- Skin cancer
- Alcohol use/abuse
- Violence and abuse
- Viral upper respiratory infection
- Tuberculosis
- Anemia

## **GUIDELINE CATEGORY**

Counseling Evaluation Prevention Risk Assessment Screening

## CLINICAL SPECIALTY

Family Practice
Internal Medicine
Obstetrics and Gynecology
Pediatrics
Preventive Medicine

#### INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Health Plans
Hospitals
Managed Care Organizations
Nurses
Physician Assistants
Physicians

## GUIDELINE OBJECTIVE(S)

- To provide a comprehensive approach to the provision of preventive services, counseling, education, and disease screening for average-risk, asymptomatic children and adolescents
- To increase regular use of health-risk assessments
- To increase the percentage of patients who are on time with recommended immunizations
- To reduce missed opportunities for administering immunizations
- To increase the percent of patients behind with recommended immunizations with catch-up plans
- To increase the percent of female patients being screened for cervical cancer beginning at age 21 or three years after first sexual intercourse, whichever is earlier; every three years after three consecutive normal Pap smears over five years
- To increase the percent of sexually active female patients under the age of 25 who are screened for chlamydia
- To increase percentage of children age four years and younger who have had vision screening

## TARGET POPULATION

Average-risk, asymptomatic individuals from birth to 18 years of age who would benefit from preventive services

There are occasional exceptions to this for high-risk populations where noted.

## INTERVENTIONS AND PRACTICES CONSIDERED

#### Risk Assessment/Prevention

- 1. Risk stratification and health assessment
- 2. Use nearly every patient contact to identify and address preventive service needs
- 3. Immunizations, including:
  - Diphtheria, tetanus, acellular pertussis (DTaP)
  - Tetanus-diphtheria (Tdap) booster
  - Inactivated poliovirus (IPV)
  - Measles, mumps, rubella (MMR) or combined measles, mumps, rubella and varicella (MMRV)
  - Pneumococcal vaccine (PCV7)
  - Varicella
  - Haemophilus influenzae type b (Hib)
  - Rotavirus vaccine
  - Hepatitis B vaccine
  - Influenza
  - Hepatitis A vaccine
  - Meningococcal vaccine
  - Human papilloma virus (HPV) vaccine

## Screening

## Screening maneuvers, including:

- Chlamydia screening
- Vision screening
- Cervical cancer screening
- Neonatal metabolic screening
- Obesity screening
- Blood lead testing
- Tobacco use screening and brief intervention in adolescents

# Counseling

Counseling and education on the following topics:

- Injury prevention: bicycle, motor vehicle, poisoning, burns, choking, falls, firearms, water
- Sudden infant death syndrome (SIDS)

Additionally, the following preventive services are discussed, but do not have sufficient evidence of effectiveness to warrant a recommendation:

- Screening for and counseling on child maltreatment
- Clinical breast exams
- Counseling about dental and periodontal disease
- Assessment of developmental and behavioral disorders
- Screening for dyslipidemia
- Hearing screening
- Iron deficiency screening

- Nutritional counseling
- Physical exam (screening for developmental dysplasia of the hip and scoliosis)
- Preconception counseling
- Pregnancy prevention counseling
- Secondhand smoke exposure counseling
- Sexually transmitted infection (STI) (other than chlamydia) counseling and screening
- Skin cancer prevention counseling
- Violence and abuse screening counseling
- Alcohol use screening and counseling
- Viral upper respiratory infection prevention counseling

The following preventive services are discussed, but not supported by evidence:

- Blood chemistry panels
- Hemoglobin (for anemia screening)
- Tuberculin skin test (routine)
- Lipid assessment (under age two)
- Urinalysis

# MAJOR OUTCOMES CONSIDERED

- Effectiveness of preventive screening
- Effectiveness of preventive counseling and education
- Effectiveness of immunizations
- Predictive value of screening tests

## **METHODOLOGY**

# METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the

conclusion. Individual studies are classed according to the system presented below, and are designated as positive, negative, or neutral to reflect the study quality.

#### Conclusion Grades:

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results of different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

## Study Quality Designations:

The quality of the primary research reports and systematic reviews are designated in the following ways on the conclusion grading worksheets:

Positive: indicates that the report or review has clearly addressed issues of inclusion/exclusion, bias, generalizability, and data collection and analysis.

Negative: indicates that these issues (inclusion/exclusion, bias, generalizability, and data collection and analysis) have not been adequately addressed.

Neutral: indicates that the report or review is neither exceptionally strong nor exceptionally weak.

Not Applicable: indicates that the report is not a primary reference or a systematic review and therefore the quality has not been assessed.

Classes of Research Reports:

## A. Primary Reports of New Data Collection:

## Class A:

· Randomized, controlled trial

## Class B:

Cohort study

## Class C:

- Non-randomized trial with concurrent or historical controls
- Case-control study
- Study of sensitivity and specificity of a diagnostic test
- Population-based descriptive study

## Class D:

- Cross-sectional study
- Case series
- Case report
- B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

## Class M:

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

#### Class R:

- Consensus statement
- Consensus report
- Narrative review

## Class X:

Medical opinion

## METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses Systematic Review with Evidence Tables

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

**COST ANALYSIS** 

The guideline developers reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

Clinical Validation-Pilot Testing Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Institute Partners: System-Wide Review

The guideline annotation, discussion, and measurement specification documents undergo thorough review. Written comments are solicited from clinical, measurement, and management experts from within the member groups during an eight-week review period of "Critical Review."

Each of the Institute's participating member groups determines its own process for distributing the guideline and obtaining feedback. Clinicians are asked to suggest modifications based on their understanding of the clinical literature coupled with their clinical expertise. Representatives from all departments involved in implementation and measurement review the guideline to determine its operational impact. Measurement specifications for selected measures are developed by the Institute for Clinical Systems Improvement (ICSI) in collaboration with participating member groups following implementation of the guideline. The specifications suggest approaches to operationalizing the measure.

Guideline Work Group: Second Draft

Following the completion of the "Critical Review" period, the guideline work group meets 1 to 2 times to review the input received. The original guideline is revised as necessary, and a written response is prepared to address each of the suggestions received from medical groups. Two members of the Preventive Services Steering Committee carefully review the Critical Review input, the work group responses, and the revised draft of the guideline. They report to the entire committee their assessment of two questions: (1) Have the concerns of the medical groups been adequately addressed? (2) Are the medical groups willing and able to implement the guideline? The committee then either approves the guideline for pilot testing as submitted or negotiates changes with the work group representative present at the meeting.

Pilot Test

Medical groups introduce the guideline at pilot sites, providing training to the clinical staff and incorporating it into the organization's scheduling, computer, and other practice systems. Evaluation and assessment occur throughout the pilot test phase, which usually lasts for three months. Comments and suggestions are solicited in the same manner as used during the "Critical Review" phase.

The guideline work group meets to review the pilot sites' experiences and makes the necessary revisions to the guideline, and the Preventive Services Steering Committee reviews the revised guideline and approves it for implementation.

#### RECOMMENDATIONS

#### MAJOR RECOMMENDATIONS

Note from the National Guideline Clearinghouse (NGC) and the Institute for Clinical Systems Improvement (ICSI): For a description of what has changed since the previous version of this guidance, refer to <u>Summary of Changes</u> -- October 2006.

Recommendations for preventive services for children and adolescents are presented in the form of an algorithm with 6 components, accompanied by detailed annotations. An algorithm is provided for <u>Preventive Services for Children and Adolescents</u>. Clinical highlights follow.

Class of evidence (A-D, M, R, X) and conclusion grade (I-III, Not Assignable) definitions are provided at the end of the "Major Recommendations" field.

Preventive services in this guideline are grouped into four groups, based on their evidence of effectiveness and their priority ranking, as follows:

Level I Preventive Services which providers and care systems must deliver (based on best evidence). (Annotation #4)

Level II Preventive Services which providers and care systems should deliver (based on good evidence). (Annotation #5)

Level III Preventive Services for which the evidence is currently incomplete. (Annotation #5a)

Level IV Screening maneuvers which are not supported by evidence. (Annotation #5b)

Table 1: Child Preventive Services Which Providers and Care Systems Must Deliver (Based on Best Evidence) (Level I)

Childhood Immunization Series

Routine Immunization Schedule for Infants, Children, and Adolescents

Vaccine	Birth	1	2	4	6	12	15	18	24	4 -	11-	15-18 yr
Vaccinic		mo	mo	mo	mo	mo	l				12 yr	10 10 91
		1110			1110					yr	· _ y ·	
DTaP			Χ	Х	Х		Χ			X	Tdap	
IPV			Χ	Х		X				Х		
MMR (MMVR)	Combined measles, mumps,						<			Х		
Varicella	rubella and varicella vaccine									Х		
	(MMRV) is preferred for											
	children 12 months through											
				ge ove			>	<				
	separate injection of											
	equivalent component											
		vac	cines				<u>.                                      </u>					
Pneumococcal			Χ	X	X		<					
(PCV7)						<u> </u>						
Hib			Χ	Χ	Х	)	<u> </u>					
Rotavirus			Х	Х	Х							
Нер В	X   X				Х							
Schedule 1												
Нер В		>	(	X		X						
Schedule 2						1	1					
Hep A						X		X				
Meningococcal												X
Influenza					X, 6-59 months							
					annually							
Human											I	X, catch up if
Papilloma											dose	appropriate;
Virus											series	3-dose series

Service	0-2	2-6 yrs	7-	13-18 yrs
	yrs	-	12	
			yrs	
Chlamydia				All sexually active
Screening				women aged 25
				years and younger
Vision		Recommended for children 4 years old		
Screening		and younger. By age 5, should be		
		performed as part of preschool		
		screening.		

Abbreviations: DTaP, diphtheria, tetanus, acellular pertussis; IPV, inactivated poliovirus vaccine; MMR, measles, mumps, and rubella; Hib, Haemophilus influenzae type b; Hep B, hepatitis B; Hep A, hepatitis A; Tdap, tetanus-diphtheria toxoid

Table 2: Child Preventive Services Which Providers and Care Systems Should Deliver (Based on Good Evidence) (Level II)

Service	0-2 years	2-6 years	7-12 vears	13-18 years		
Cervical Cancer Screening		<sub> </sub> years <sub> </sub>	yours	Beginning at age 21 or within three years after first sexual intercourse, whichever is earlier; every 3 years after 3 consecutive normal Pap smears over 5 years.		
Injury Prevention Counseling: Bicycle Safety	Helmet use when ridin	g a bicy	/cle.			
Motor Vehicle Safety	Car seat when riding in a motor vehicle. Rear facing until 1 year and 20 pounds.					
Injury Prevention Counseling: Poisoning				dily accessible. Use of child red/unused medications.		
Injury Prevention Counseling: Burns	Install smoke detector Water heater temperature; fire prevention.	s and te	est bi-a	nnually.		
Injury Prevention Counseling: Choking	CPR training					
Injury Prevention Counseling: Falls	Use of gates, never leave baby unattended on changing table.					
Injury Prevention Counseling: Firearms		*		Firearm safety		
Injury Prevention Counseling: Water Safety	CPR training					
Blood Lead Testing	Perform blood lead test at 12 months.					
Infant Sleep Positioning and SIDS Counseling	Place infants to sleep on their back.					
Neonatal Screening	Newborn metabolic screening performed prior to hospital discharge >24 hours of age.					
Obesity Screening Tobacco Use Screening and Brief Intervention in Adolescents	Record height, weight and BMI annually Establish tobacco use and secondhand exposure, offer tobacco cessation on a regular basis.					

Abbreviations: BMI, body mass index; CPR, cardiopulmonary resuscitation; SIDS, sudden infant death syndrome

Preventive Services for Which the Evidence Is Currently Incomplete (Level III)

- Child maltreatment screening
- Clinical breast exam screening
- Dental and periodontal disease counseling
- Developmental/behavioral assessment testing
- Dyslipidemia screening
- Hearing screening
- Nutritional counseling
- Iron deficiency screening
- Physical exam
  - Developmental dysplasia of the hip screening
  - Scoliosis screening
- Preconception counseling
- Pregnancy prevention counseling
- Secondhand smoke exposure counseling
- Sexually transmitted infection (STI) (other than Chlamydia) counseling
- Sexually transmitted infection (other than Chlamydia) screening
- Skin cancer screening and counseling
- Substance abuse: alcohol use screening and counseling
- Violence and abuse screening
- Viral upper respiratory infection prevention counseling

Screening Maneuvers Which Are Not Supported by Evidence (Level IV)

- Blood chemistry panels
- Hemoglobin (for anemia screening)
- Lipid assessment (under age two)
- Tuberculin skin testing (routine)
- Urinalysis

## Clinical Highlights

- All clinic visits, whether acute, chronic, or for preventive service visits are opportunities for prevention. Incorporate appropriate preventive services at every opportunity. (Annotation #3)
- Assess patients for risk factors at periodic intervals. (Annotation #2)
- Address or initiate child preventive services which providers and care systems must deliver (based on best evidence) (Level 1). (Annotation #4)
  - a. Childhood immunization series
  - b. Chlamydia screening
  - c. Vision screening

#### Preventive Services for Children and Adolescents Algorithm Annotations

1. System Alerts Patient/Parent or Provider of Needed Preventive Services

Clinics must determine some way of communicating what has been done, what needs to be done, etc. This may be a paper face sheet in the patient's chart, electronic postcard reminders, or pop-ups on computer screen, for example. The ideal system at a minimum alerts providers, the appointment desk and others at each contact, and even better if it alerts patient and the health team independent of patient-initiated contact.

The advent of the electronic health record has supported the trend of providing appropriate preventive services exactly when indicated, therefore lessening the need for the periodic exam as an organizing construct.

## 2. Perform Risk Stratification and Health Assessment

In order to provide these services, it is first necessary to know which services are needed by individual patients. This includes both knowing when the last services were provided and what risk factors are present. This information may be most efficiently collected through the use of questionnaires or automated means of combining information from the medical record with patient-collected information. Nursing or reception staff can collect this information, or increasingly it may be collectible through Internet and Webbased technologies. As important as collecting data thoroughly once, though, is having some way to update the information at regular intervals. One-on-one interviews by clinicians are the least efficient way to obtain or update this information. Sample preventive risk assessment forms are available through the ICSI Knowledge Products and Resources in the Support for Implementation section of the original guideline document.

Preventive counseling and education should be emphasized to change health habits before disease develops. Health risk assessment and health education are of greater value to patients than most routine screening tests.

## 3. Use Every Opportunity for Prevention

Nearly every patient contact for any reason should be used to identify and address preventive service needs.

Possible examples might include the following:

- A mother of a 15-month-old patient calls, requesting an appointment for a sore throat; if not contraindicated, this would trigger the scheduler to ask patient about need for immunizations.
- A father of a five-year-old year patient calls for any reason (e.g., wishing to schedule any appointment type, or to speak with clinician or nurse) during the fourth quarter of the year. The scheduler/receptionist could ask patient about flu shot status and facilitate the process for completion of this service.
- A new patient accesses the Internet to schedule a preventive service visit. The interactive system reminds patient to bring or arrange to have mailed his/her medical records. The system also presents an option to complete an automated health-risk assessment form.

The work group recognizes that urgent or emergent visits may not always present preventive service opportunities.

4. Preventive Services Which Providers and Care Systems Must Deliver (Based on Best Evidence). (Level I)

## 4a. Childhood Immunization Series

Refer to Table 1 above for routine immunization schedule for infants, children, and adolescents.

# Special Uses Immunization Schedule

Vaccine	6	12 mo	2 yr	3 yr	4-6 yr	13-18 yr			
Varicella	mo	mo	For children without evidence of immunity initiate and/or complete a 2 dose series of varicella vaccine. Minimum interval for 2nd dose is 3						
	months for children 12 months to 12 years days for children 13 years or older.				3				
Pneumococcal	(See Annotation #5 in the NGC summary of ICSI guideline Immunizations)								
Influenza	X (annual)								
Hepatitis A (Hep A)			X (See Annotation #11 in the NGC summary of ICSI guideline <u>Immunizations</u> )						
Meningococcal						X 15 years			
Human papilloma virus (HPV)						X, catch up if appropriate			

# Counseling Messages

Educate parents to immunize children according to age appropriate schedule.

## References/Related Guidelines

See the NGC summary of the ICSI <u>Immunizations</u> guideline for current immunization schedules and annotations to the basic schedule above.

# 4b. Chlamydia Screening

## Services

Routine screening for chlamydia is recommended for all sexually active women aged 25 years and younger.

## Risk factors include:

• Having new or multiple sex partners

- Having a prior history of a sexually transmitted infection (STI)
- Not using condoms consistently and correctly

Refer to the original guideline document for information on burden of suffering.

## Efficacy

The most efficacious means of reducing the risk of acquiring sexually transmitted infections through sexual contact is either abstinence from sexual relations or maintenance of a mutually monogamous sexual relationship with an uninfected partner. Condoms have been shown in the laboratory to prevent transmission of chlamydia trachomatis, herpes simplex virus, trichomonas, cytomegalovirus and human immunodeficiency virus (HIV). Even under optimal conditions, however, condoms are not always efficacious in preventing transmission. Condom failures occur at an estimated rate of 10% to 15% either as a result of product failure or as a result of incorrect or inconsistent use.

## Counseling Messages

Empathy, confidentiality and a nonjudgmental, supportive attitude are important when discussing issues of sexuality. Messages should be delivered both verbally and in the form of educational materials.

A complete sexual and drug history should be obtained on all adolescents and adults.

Please note that this guideline discusses primary prevention of STIs through the adoption of safer sexual practices. It does not address patient education messages after an STI is diagnosed.

Preventive counseling should be given at preventive care visits beginning at age 12, or earlier if sexually active. These visits will frequently include education and counseling regarding contraception and pregnancy. These messages should also be given as indicated by clinical discretion (e.g., genitourinary symptoms).

- Reinforce the fact that abstinence is the most effective means to decrease STI risk.
- Reinforce the fact that a mutually monogamous relationship with a partner known not to be infected is effective in decreasing STI risk.
- Encourage safer sexual practices including regular use of latex condoms.
- Reinforce increased risk of contractive STIs associated with multiple partners.
- Reinforce avoiding sexual contact with high-risk partners (e.g., intravenous drug users, commercial sex workers, and persons with numerous sexual partners).
- Emphasize that alcohol/drug use is associated with high-risk sexual behavior.

- Inform women at risk that spermicides and female barrier contraceptive methods (e.g., diaphragm or cervical cap) can reduce the risk of gonorrhea and chlamydia.
- More information is available including the proper use of condoms if indicated. See the "Other Resources Available" in the Support for Implementation section of the original guideline document.

## References/Related Guidelines

See Appendix D, "Counseling and Education Tools: Problem Drinking" and the Support for Implementation section, Knowledge Products and Resources, "Preventive Services Risk Assessment Forms" and "Counseling and Education Tools for Preventive Services," in the original guideline document for tools regarding obtaining a sexual and drug history.

Evidence supporting this recommendation is of class: R

4c. Vision Screening

Service

Vision screening is recommended for children four years old and younger. By age five, vision screening should be performed in the clinic or school as part of preschool screening.

# Efficacy

No direct evidence demonstrates that vision screening and early treatment in children leads to improved visual acuity and or other outcomes such as school performance. The U.S. Preventive Services Task Force concluded that effectiveness of screening in preschool children is supported by indirect evidence that screening is effective in identifying strabismus and amblyopia, treatment of strabismus and amblyopia is effective, and more intensive screening leads to improved visual acuity compared to usual screening. A single randomized control trial demonstrated that children randomized to more intensive screening between 8 and 37 months of age had a lower prevalence of severe amblyopia, and at 7.5 years of age lower prevalence of amblyopia after treatment.

A prospective study of two matched cohorts of over 700 preschool children each in Ontario found that 3% of children screened before entry to school had moderate to severe vision impairment (visual acuity 20/50 or greater) compared to 6% of children in the matched cohort screened 6-12 months later, indicating that effectiveness of treatment is approximately 50%. Those found to have vision problems using the illiterate E screening instrument were referred to their family doctor.

## Counseling Messages

Normal objective vision screening performed at schools need not be repeated by clinics for average-risk, asymptomatic children.

Evidence supporting this recommendation is of classes: A, B, R

5. Preventive Services Which Providers and Care Systems Should Deliver (Based on Good Evidence (Level II)

Refer to Table 2 above for information on Level II preventive services.

Cervical Cancer Screening

Service

All women should be screened for cervical cancer beginning at age 21 or within three years after initiating sexual intercourse, whichever is earlier. Screening should be performed every three years after three consecutive normal Pap smears over five years.

Human Papilloma virus (HPV) testing may be used as an adjunct to Papanicolaou (Pap) smear screening to help minimize unnecessary colposcopies and other interventions.

Women who have had dysplasia on prior Pap smears should continue with annual screening for five years after the last dysplastic Pap smear; after that, they need only every-three-year screening.

References/Related Guidelines

See the NGC summary of the ICSI <u>Initial Management of Abnormal Cervical</u> <u>Cytology (Pap Smear) and HPV Testing guideline.</u>

Evidence supporting this recommendation is of classes: C, M, R

Injury Prevention: Bicycle Safety

Service

Ask about helmet use when riding a bicycle.

Efficacy

Data on effectiveness of bicycle helmet safety from two case-controlled studies provide evidence that the risk of head injury among bicyclists is reduced as much as 69 to 80%. Counseling bicyclists to avoid riding near motor vehicle traffic is based on evidence that nearly 95% of bicycle fatalities occur as a result of a collision with a motor vehicle.

Families who were counseled about wearing helmets while biking reported 44% compliance compared to 19% helmet use by families who did not receive counseling. Other studies have also show a positive effect from counseling.

Community efforts to separate bicyclists from motor vehicle traffic have met with success in preventing bicycle accidents, but the effectiveness of counseling bicyclists to use these routes remains unstudied. Following safety rules, although not included in U.S. Preventive Services Task Force recommendation, is felt to be a useful addition to bicycle safety counseling.

Refer to the original guideline document for information on burden of suffering.

Counseling Message

## All Individuals

- Reinforce always wearing an approved safety helmet when riding a bicycle.
- To enhance safety, follow safety rules (look carefully for traffic, signal turns, etc.), avoid riding in heavy motor vehicle traffic, wear light colored and reflective clothing, and install a light on your bicycle.

Evidence supporting this recommendation is of classes C, D, R

Injury Prevention Counseling: Motor Vehicle Safety

Service

Ask about the use of car seats, booster seats, and seat belts in the family.

Ask about helmet use in motorcycle riders.

Refer to the original guideline document for information on the efficacy of counseling and burden of suffering from motor vehicle injuries.

Counseling Messages

## Age Group - Birth to 9 Years

- Install and use federally approved child safety seats.
- Discuss the fact that infants should face the rear of the vehicle until they are both 1 year of age and 20 lbs, and should not be placed in any seat with an air bag. (Best middle rear seat).
- All children under 4 years of age must ride in appropriate car seat.
- Discuss the fact that children between 4 to 9 years and weighing less than 80 pounds should be in a belt positioning booster seat.

# All Individuals

- Discuss always wearing a safety belt when driving or riding in a car. Discuss the fact that 50% of death and disability from motor vehicle accidents can be prevented when passengers routinely wear seat belts.
- Do not drive or ride in a motor vehicle when the driver is under the influence of alcohol or drugs.

- Discuss the fact that passengers should not ride in cargo areas of any vehicle.
- The safest way to travel is to ensure that EVERYONE in the vehicle is correctly buckled up and that all children under age 13 ride in the back seat.
- For air bag safety, drivers should try to maintain at least 10 inches between themselves and the steering wheel. Front passenger seats should be moved as far back as possible.
- Motorcycle riders should always wear helmets to reduce the risk of head injury.

Evidence supporting this recommendation is of classes C, R

Injury Prevention: Poisoning

Service

Ask about the availability of the poison control number in the home and safety measures to prevent accidental poisonings.

## Efficacy

Childhood poisoning can be reduced by placing medications in child-resistant containers. Federal legislation requiring such containers for aspirin, acetaminophen, prescription drugs and household chemicals has been associated with a subsequent decrease in childhood poisoning from these substances. Carbon monoxide detector use could prevent many of the 2,100 U.S. deaths from carbon monoxide poisoning each year.

Education has been shown to motivate parents to display poison control center telephone numbers. Other studies have found counseling to be ineffective in promoting safety. Controlled studies of counseling parents to prevent childhood poisoning have not shown a significant effect on poison injury rates.

Counseling Messages

## Birth-12 Years

- Reinforce having the national poison control phone number readily accessible (1-800-222-1222).
- Use child-resistant containers for medications, toxic substances and matches.
- Dispose of expired or unused portions of medications.
- Syrup of ipecac is no longer recommended in households

Evidence supporting this recommendation is of classes: D, R

Refer to Table 2 above and to the original guideline document for information on prevention of injuries due to poisoning, burns, choking, falls, firearms, and water.

## **Blood Led Testing**

#### Service

Lead screening is recommended to be performed at least once at age 12 months for all children at increased risk for this problem.

According to the U.S. Preventive Services Task Force, this includes:

- All children at increased risk of lead exposure
- All children with identifiable risk factors, and
- All children living in communities in which the prevalence of blood lead levels requiring intervention is high or undefined.

The optimal frequency of screening for lead exposure in children, or for repeated testing of children previously found to have elevated blood lead levels, is unknown and is left to clinical discretion.

A more recent guideline from the Centers for Disease Control and Prevention (CDC) endorses universal screening at age one and two years and children 36 to 72 months of age who have not been previously screened, if they meet one of the following criteria:

- Child resides in areas with greater than 27% of the housing built before 1950
- In populations where the percentage of one- and two-year olds with elevated blood lead level (BLL) greater than 12%
- Child receives services from public assistance for the poor, such as Medicaid or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- For children in other areas, the CDC recommends targeted screening based on risk assessment. See counseling message below.

The CDC recommends that each state develop a statewide plan that would supersede the CDC's general recommendation. Contact the state department of health or local public health agency for more information on screening recommendations for your area and follow-up of positive results.

Refer to the original guideline document for information on efficacy of blood lead testing and burden of suffering.

# Counseling Message

Initial blood lead screening, which can consist of a capillary blood lead test, should be done at around one and two years of age and for children up to six years of age who have not previously been screened if parent or guardian answers "yes" or "don't know" to the following questions:

a. During the past six months has the child lived in or regularly visited a home, childcare or other building built before 1950? This question

- could apply to a facility such as a home day-care center or the home of a babysitter or relative.
- b. During the past six months has the child lived in or regularly visited a home, childcare or other building built before 1978 with recent or ongoing repair, remodeling or damage (such as water damage or chipped paint).
- c. Has the child or his/her sibling, playmate or housemate had an elevated blood lead levels.

References/Related Guidelines

http://www.cdc.gov/nceh/lead/

http://www.ahrq.gov/clinic/uspstfix.htm

Evidence supporting this recommendation is of classes: M, R

Infant Sleep Positioning and SIDS Counseling

Service

Ask how child is positioned for sleep. Inform parents of importance of backsleeping position. Demonstrate the appropriate sleeping position when the patient is under medical care.

Refer to the original guideline document for information on efficacy of SIDS counseling and burden of suffering.

Counseling Message

Infants should be placed on their back for sleep. Side sleeping is no longer recognized as an alternative position. Parents should be advised about the appropriate sleeping position starting in the newborn nursery. Health care workers should be careful to place babies on their back to demonstrate to parents the appropriate sleeping position. Continued work to educate all potential caregivers of infants should be supported.

Infant sleep surfaces should be firm and there should be no loose bedding or soft objects around the infant.

Parents should be encouraged not to smoke, as this has many important health benefits. Smoking during pregnancy has been shown to be associated with increased risk of SIDS.

A proximate but separate sleeping environment and the use of pacifiers have been recommended. These should be discussed with parents in the context of fully supporting breastfeeding.

Supporting evidence is of classes: C, D, M, R

Neonatal Screening

#### Service

Metabolic screens and other interventions in the first week of life should be performed according to state law.

# Efficacy

Newborn metabolic screening is designed to detect infants with inborn errors of metabolism. Early identification in many cases can avert a poor outcome for a child with various interventions depending on the condition. Approximately 4,000 infants per year are identified with a condition through the newborn metabolic screening program. Each state varies on the test required to be done by law, but a uniform approach with all states using mass spectrometry is being promoted by a variety national groups (www.mchb.hrsa.gov/screening).

# Counseling Message

All infants should receive a newborn metabolic screening test prior to hospital discharge, ideally when greater than 24 hours of age. Infants who receive screening before 24 hours of age should receive a repeat test before the 2nd week of age.

System alerts should provide notice of positive results. Appropriate follow-up services must be provided for any child with a positive test.

Evidence Supporting this Recommendation is of Class: R

Obesity Screening

Service

Record height, weight, and body mass index (BMI) annually beginning at age two as part of a normal visit schedule. Monitor BMI.

Refer to the original guideline document for information on efficacy of obesity screening.

Counseling Messages

Encourage wholesome eating and physical activity.

## 2-18 years

#### Encourage:

- Consumption of fruits, vegetables, whole grains and low-fat dairy products
- Limiting total fat, especially saturated, trans fats, and cholesterol

- Daily participation of 30 to 60 minutes of moderate to vigorous physical activity appropriate for age
- Regular meals

## Discourage:

- Foods with added sugars
- Sweetened beverages
- Television and video games; limit to one hour per day

#### References/Related Guidelines

http://www.heathierus.gov/dietary-guidelines

http://www.cdc.gov/healghyyouth/physicalactivity/promoting\_health/#download

# http://www.mypyramid.gov

See Knowledge Products section, "Other Resources Available" in the original guideline document; ICSI's Technology Assessment Report on Treatment of Obesity in Children and Adolescents; and the NGC summary of ICSI guideline Prevention and Management of Obesity (Mature Adolescents and Adults)

Evidence supporting this recommendation is of classes: A, D, M, R

Tobacco Use Screening and Brief Intervention in Adolescents

#### Service

Establish tobacco use and secondhand smoke exposure and reassess at every opportunity. (See section on Secondhand Smoke Exposure in the original guideline document).

Offer tobacco cessation services on a regular basis to all patients who use tobacco.

The key components of successful office tobacco cessation interventions are:

- Ask about tobacco use and smoke exposure at every opportunity.
- Advise all users to quit.
- Assess willingness to make a quit effort.
- Assist users' willingness to make a quit attempt.
- Arrange follow-up.

Refer to the original guideline document for information on efficacy of tobacco use screening.

Counseling Messages

For children and adolescents aged 10 years and above and the child or adolescent is using tobacco:

- Emphasize short-term negative effects of tobacco use.
- Advise tobacco users to quit.
- Assess user's willingness to make a quit attempt.
- Provide counseling depending on readiness-to-quit stage. Provide a motivational intervention if the user is not ready to make a quit effort.
- Assist in quitting if ready to make a quit effort. Negotiate a quit date.
   Counsel to support cessation and build abstinence skills. Offer phone line for more assistance.
- Arrange follow-up to occur soon after the quit date.

# For All Ages

- If accompanying household member uses tobacco, encourage member to quit. If the member user is interested in quitting, encourage a visit at his or her clinic for more cessation assistance.
- Provide educational and self-help materials.

## References/Related Guidelines

See the NGC summaries of ICSI guidelines <u>Tobacco Use Prevention and Cessation for Adults and Mature Adolescents</u> and <u>Tobacco Use Prevention and Cessation for Infants</u>, Children, and Adolescents.

Evidence supporting this recommendation is of class: R

5a. Preventive Services for Which the Evidence Is Currently Incomplete (Level III)

Level III services could be left to the judgment of individual medical groups, clinicians and their patients. These services either have insufficient evidence to prove their effectiveness and/or have important harms. For these preventive services in particular, decisions about offering the service should be made on a patient-by-patient basis. It is important to remember that insufficient evidence does not mean the service is not effective, but rather that the current literature is not sufficient to say whether or not the service is effective.

Please refer to the beginning of the "Major Recommendations" field and to the original guideline document for information on Level III preventive services.

5b. Screening Maneuvers Which Are Not Supported by Evidence (Level IV)

The list of Level IV preventive services is provided at the beginning of "Major Recommendations" field. Please refer to the original guideline document for detailed information on Level IV preventive services.

## Definitions:

## Classes of Research Reports:

A. Primary Reports of New Data Collection:

## Class A:

Randomized, controlled trial

## Class B:

Cohort study

#### Class C:

- Nonrandomized trial with concurrent or historical controls
- Case-control study
- Study of sensitivity and specificity of a diagnostic test
- Population-based descriptive study

## Class D:

- Cross-sectional study
- Case series
- Case report
- B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

## Class M:

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

## Class R:

- Consensus statement
- Consensus report
- Narrative review

## Class X:

• Medical opinion

## Conclusion Grades:

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with

negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results of different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

## CLINICAL ALGORITHM(S)

A detailed and annotated clinical algorithm is provided for <u>Preventive Services for</u> Children and Adolescents.

# EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is classified for selected recommendations (see "Major Recommendations").

In addition, key conclusions contained in the Work Group's algorithm are supported by a grading worksheet that summarizes the important studies pertaining to the conclusion. The type and quality of the evidence supporting these key recommendations is graded for each study.

This guideline is a synthesis of recommendations from other Institute for Clinical Systems Improvement (ICSI) guidelines, primary evidence through literature reviews, other professional groups, particularly United States Preventive Services Task Force (USPSTF), and workgroup consensus.

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Improved use of a comprehensive approach to the provision of preventive services, counseling, education, and disease screening for average-risk, asymptomatic children and adolescents as demonstrated by:

- Increased regular assessment of health risks
- Increased percentage of patients who are up-to-date on immunizations
- Reduction in missed opportunities for administering immunization
- Increased percentage of patients behind with recommended immunizations with catch-up plans
- Increased percentage of female patients being screened for cervical cancer
- Increased percentage of sexually active female patients under the age of 25 who are screened for chlamydia
- Increased percentage of children age four and younger who have had vision screening

## POTENTIAL HARMS

Not stated

## QUALIFYING STATEMENTS

## QUALIFYING STATEMENTS

- This clinical guideline is designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.
- This clinical guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients are urged to consult a health care professional regarding their own situation and any specific medical questions they may have.
- It is the guideline development group's assumption that this guideline will
  primarily serve as a guide for medical groups to develop practice systems for
  their delivery. While individual clinicians are welcome to refer to this guide,
  the group does not expect that to be common and it certainly is not the best
  way to provide important services at high rates. Such an achievement clearly
  requires the establishment of systems that rely on standing orders, task
  delegation, reminders, and other automatic ways to identify needs and
  provide the services.
- While there is good evidence that modifying certain behaviors has positive health benefits (unsafe sex, accidents and safety, nutrition, physical activity), there is minimal evidence at present that screening for these conditions or asking about them in the context of a risk assessment, even if followed by advice from a physician or other provider, will result in a change in behavior or positive outcomes. Therefore, this guideline includes:
  - Minimal recommendations for risk assessment to drive counseling for what are largely lifestyle issues
  - Specific recommendation that risk assessment and counseling about lifestyle not be considered suitable parameters for systematic implementation measures

- Counseling messages for those clinicians who want to provide such counseling or whose patients express an interest in receiving this information
- There is insufficient evidence to recommend one prevention visit schedule over another in terms of lowering mortality and morbidity, recognizing disability, promoting optimal growth and development, or helping patients achieve longer, more productive lives. Many services can be provided during routine visits. Similarly, an assessment of preventive services needs can be incorporated into any visit. The visit schedules recommended in these guidelines may augment a clinic's ability to assure provision of preventive services, but this may be unnecessary over time as effective clinic systems allow the services to be incorporated into other clinic visits.
- Evidence is insufficient to warrant ranking of recommendations for a number of preventive services. Refer to the "Major Recommendations" field and the original guideline document for more information.

## IMPLEMENTATION OF THE GUIDELINE

#### DESCRIPTION OF IMPLEMENTATION STRATEGY

Once a guideline is approved for general implementation, a medical group can choose to concentrate on the implementation of that guideline. When four or more groups choose the same guideline to implement and they wish to collaborate with others, they may form an action group.

In the action group, each medical group sets specific goals they plan to achieve in improving patient care based on the particular guideline(s). Each medical group shares its experiences and supporting measurement results within the action group. This sharing facilitates a collaborative learning environment. Action group learnings are also documented and shared with interested medical groups within the collaborative.

Currently, action groups may focus on one guideline or a set of guidelines such as hypertension, lipid treatment, and tobacco cessation.

The following detailed measurement strategies are presented to help close the gap between clinical practice and the guideline recommendations. Summaries of the measures are provided in the National Quality Measures Clearinghouse (NQMC).

## Key Implementation Recommendations

The following system changes were identified by the guideline work group as key strategies for health care systems to incorporate in support of the implementation of this guideline.

- 1. Establish a process for parents/guardians to complete a risk assessment questionnaire prior to periodic well-child visits and update as necessary.
- 2. The results of the questionnaire are used to identify needs for counseling and other preventive services.
- 3. The provision of needed preventive services are documented and monitored.

- 4. Patients behind in their preventive visit schedule are identified at routine office visits.
- 5. Establish a system by which a risk assessment questionnaire is completed on each patient and updated as necessary.
- 6. Develop a risk-assessment questionnaire that allows for easy identification of counseling needs.
- 7. Risk-assessment questionnaires should be in a consistent and easily accessible place in the patient's chart.
- 8. Establish a system for consistent documentation and monitoring of counseling.
- 9. Develop electronic data systems to track the immunization status of patients under the provider's care, with the capability to produce reminders and recalls of upcoming or overdue immunizations. (Annotations #14, 28; ICSI Immunization guideline)
- 10. Remove barriers to immunization services. (Annotation #14; ICSI Immunization guideline)
- 11. Develop tracking systems to produce periodic immunization audits for use in developing solutions to identified problems. (Annotations #14, 28; ICSI Immunization guideline)

#### **IMPLEMENTATION TOOLS**

Chart Documentation/Checklists/Forms Clinical Algorithm Pocket Guide/Reference Cards Quality Measures Resources

For information about <u>availability</u>, see the "Availability of Companion Documents" and "Patient Resources" fields below.

## RELATED NQMC MEASURES

• Preventive services for children and adolescents: the percentage of patients who are on time with recommended immunizations.

# INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

**IOM CARE NEED** 

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

Institute for Clinical Systems Improvement (ICSI). Preventive services for children and adolescents. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2006 Oct. 77 p. [153 references]

#### **ADAPTATION**

Not applicable: The guideline was not adapted from another source.

## DATE RELEASED

1995 Jun (revised 2006 Oct)

## GUI DELI NE DEVELOPER(S)

Institute for Clinical Systems Improvement - Private Nonprofit Organization

## GUI DELI NE DEVELOPER COMMENT

Organizations participating in the Institute for Clinical Systems Improvement (ICSI): Affiliated Organizations participating in the Institute for Clinical Systems Improvement (ICSI): Affiliated Community Medical Centers, Allina Medical Clinic, Altru Health System, Aspen Medical Group, Avera Health, CentraCare, Columbia Park Medical Group, Community-University Health Care Center, Dakota Clinic, ENT Specialty Care, Fairview Health Services, Family HealthServices Minnesota, Family Practice Medical Center, Gateway Family Health Clinic, Gillette Children's Specialty Healthcare, Grand Itasca Clinic and Hospital, HealthEast Care System, HealthPartners Central Minnesota Clinics, HealthPartners Medical Group and Clinics, Hutchinson Area Health Care, Hutchinson Medical Center, Lakeview Clinic, Mayo Clinic, Mercy Hospital and Health Care Center, MeritCare, Mille Lacs Health System, Minnesota Gastroenterology, Montevideo Clinic, North Clinic, North Memorial Care System, North Suburban Family Physicians, Northwest Family Physicians, Olmsted Medical Center, Park Nicollet Health Services, Pilot City Health Center, Quello Clinic, Ridgeview Medical Center, River Falls Medical Clinic, Saint Mary's/Duluth Clinic Health System, St. Paul Heart Clinic, Sioux Valley Hospitals and Health System, Southside Community Health Services, Stillwater Medical Group, SuperiorHealth Medical Group, University of Minnesota Physicians, Winona Clinic, Ltd., Winona Health

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#### **GUI DELI NE COMMITTEE**

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## FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

In the interest of full disclosure, Institute for Clinical Systems Improvement (ICSI) has adopted the policy of revealing relationships work group members have with companies that sell products or services that are relevant to this guideline topic. The reader should not assume that these financial interests will have an adverse impact on the content of the guideline, but they are noted here to fully inform readers. Readers of the guideline may assume that only work group members listed below have potential conflicts of interest to disclose.

No work group members have potential conflicts of interest to disclose.

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## **GUIDELINE STATUS**

This is the current release of the guideline.

This guideline updates a previous version: Preventive services for children and adolescents. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Oct. 68 p.

## GUIDELINE AVAILABILITY

Electronic copies: Available from the <u>Institute for Clinical Systems Improvement</u> (ICSI) Web site.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

#### AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Preventive services for children and adolescents. Executive summary.
   Bloomington (MN): Institute for Clinical Systems Improvement, 2006 Oct. 1
   p. Electronic copies: Available in Portable Document Format (PDF) from the Institute for Clinical Systems Improvement (ICSI) Web site.
- Appendices A-D of the <u>original guideline document</u> provide various counseling and educational tools, including body mass index (BMI) charts.
- ICSI pocket guidelines. April 2006 edition. Bloomington (MN): Institute for Clinical Systems Improvement, 2006. 298 p.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: <a href="www.icsi.org">www.icsi.org</a>; e-mail: <a href="icsi.info@icsi.org">icsi.info@icsi.org</a>.

#### PATIENT RESOURCES

None available

## **NGC STATUS**

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